IN THE CLAIMS

1.   (Previously Presented) A method, comprising:

detecting a fault associated with processing of a workpiece in a manufacturing system

   having a plurality of processing tools;

identifying at least one of the processing tools that processes the workpiece;

accessing a database, wherein the database includes information associating one or more

   faults with one or more of the identified processing tools;

determining at least one of the identified processing tools that may be associated with the

   detected fault based on at least a portion of the information stored in the database;

   and

providing an error signal to the at least one of the determined processing tools to perform

   diagnostics based on the detected fault.

2.   (Previously Presented) The method of claim 1, wherein each of the plurality of

the processing tools comprises an associated equipment interface, wherein providing the error

signal comprises providing the error signal to the equipment interface of the at least one of the

determined processing tools.

3.   (Original) The method of claim 1, further comprising performing corrective

action based on performing the diagnostics.

4.   (Original) The method of claim 3, wherein performing the corrective action

comprises performing the corrective action based on a classification of the fault.

4

5.   (Original) The method of claim 1, wherein detecting the fault comprises receiving operational data from one or more of the identified processing tools and comparing the operational data to fault model data.

6.   (Original) The method of claim 1, wherein identifying the at least one of the processing tools comprises accessing a history module including a list of one or more of the plurality of the processing tools that process the workpiece.

7.   (Original) The method of claim 1, wherein detecting the fault comprises receiving metrology data and determining that at least a portion of the metrology data is not within an acceptable range.

8.   (Original) An equipment interface of a processing tool, comprising:

a storage unit; and

a control unit communicatively coupled to the storage unit, the control unit adapted to:

receive an error signal provided by a fault detection unit, wherein the error signal is

indicative of an error condition associated with the processing tool of a

manufacturing system;

access information related to the error condition from a central database; and

determine a possible cause of the error condition based on the accessed information.

5

9.   (Original) The equipment interface of claim 8, wherein the control unit is adapted to perform diagnostics on the processing tool based on the accessed information.

10.   (Original) The equipment interface of claim 8, wherein the error condition is associated with processing of a wafer by the processing tool.

11.   (Original) The equipment interface of claim 8, wherein the error condition is based on a comparison of metrology data to an acceptable range of values.

12.   (Original) The equipment interface of claim 8, wherein the error condition is based on a comparison of an operation data that is provided by the processing tool and fault model data.

13.   (Original) The equipment interface of claim 8, wherein the central database comprises entries regarding classification of the error condition.

14.   (Original) The equipment interface of claim 8, wherein the control unit is adapted to receive the error signal over an APC framework and wherein the error signal is a combinational error signal.

15.   (Currently Amended) An article comprising one or more machine-readable storage media containing instructions that when executed enable a processor to:

6

receive an error signal provided by a fault detection unit, wherein the error signal is

indicative of a fault associated with processing of a wafer in a processing tool;

access information related to the fault from a central database, <u>wherein the database</u>

<u>includes information associating one or more error faults with the processing tool</u>; and

perform diagnostics on the processing tool based on the accessed information.

16.   (Original) The article of claim 15, wherein the instructions when executed enable

the processor to perform corrective action to cure the fault indicated by the error signal.

17.   (Original) The article of claim 15, wherein the instructions when executed enable

the processor to determine the fault based on comparing operation data from the processing tool

to fault model data.

18.   (Original) The article of claim 15, wherein the instructions when executed enable

the processor to determine the fault based on metrology data associated with the wafer that is

processed by the processing tool.

19.   (Original) The article of claim 15, wherein the instructions when executed enable

the processor to access the central database to retrieve information related to a classification of

the fault.

7

20.   (Original) The article of claim 15, wherein the instructions when executed enable the processor to receive a combinational error signal indicating that the fault may have been due to at least two processing tools.

21.   (Previously Presented) A system, comprising:

a plurality of processing tools adapted to process a lot of wafers; and

a fault detection data processing unit communicatively coupled to the plurality of

processing tools over a framework, the fault detection data processing unit

adapted to:

receive metrology data based on the lot of wafers processed by at least one of the

processing tools;

detect a fault based on the received metrology data;

identify one or more of the plurality of processing tools that processes the lot of wafers;

access a database, wherein the database includes information associating one or more

faults with one or more of the identified processing tools;

determine at least one of the identified processing tools that may be associated with the

detected fault based on at least a portion of the information stored in the database;

and

provide an error signal to the one or more of the determined processing tools based on the

detected fault.

22.   (Previously Presented) The system of claim 21, wherein each of the processing tools comprises an associated equipment interface, and wherein the fault detection data

8

Serial No. 10/085,829

processing unit provides the error signal to the equipment interface of the one or more of the determined plurality of processing tools.

23.   (Original) The system of claim 22, wherein the fault detection data processing unit comprises a database including a classification of the detected fault.

24.   (Previously Presented) The system of claim 22, wherein the equipment interface performs diagnostics on the one or more of the determined plurality of processing tools.

25.   (Previously Presented) The system of claim 22, wherein the equipment interface takes corrective action to cure the fault in at least one of the determined plurality of processing units.

26.   (Previously Presented) An apparatus comprising:

means for detecting a fault associated with processing of a workpiece in a manufacturing system having a plurality of processing tools;

means for identifying at least one of the processing tools that processes the workpiece;

means for accessing a database, wherein the database includes information associating one or more faults with one or more of the identified processing tools;

means for determining at least one of the identified processing tools that may be associated with the detected fault based on at least a portion of the information stored in the database; and

9

means for providing an error signal to the at least one of the determined processing tools

to perform diagnostics based on the detected fault.

Serial No. 10/085,829